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Search Results - Record(s) 1 through 50 of 59 returned.

- ☐ 1. 6149919. 25 Mar 97; 21 Nov 00. Immunogenic detoxified mutants of cholera toxin and of the toxin LT, their preparation and their use for the preparation of vaccines. Domenighini; Mario, et al. 424/236.1; 424/184.1 424/234.1 424/240.1 424/241.1 424/257.1 424/261.1 435/69.3. A61K039/02 A61K039/108 A61K039/106 C12P021/06.
- ☐ 2. 6106843. 03 Feb 99; 22 Aug 00. Process for the isolation of a nontoxinogenic vibrio cholerae strain and a process for preparing cholera vaccine from said vibrio cholerae strain. Muthukumarappa; Thungapathra, et al. 424/261.1; 424/234.1 424/93.2 424/93.4 435/248 435/252.3 435/476 435/488 435/909. A61K029/106 C07H021/04 C07K014/28 C12N001/21.
- ☐ 3. 6043057. 22 Apr 97; 28 Mar 00. Recombinant systems for expression of the cholera B-sub-unit with the aid of foreign promoters and/or leader peptides. Holmgren; Jan, et al. 435/69.7; 435/252.3 435/320.1 530/350 536/23.4. C07K019/00 C12N015/62.
- ☐ 4. 6019973. 05 Jan 98; 01 Feb 00. Hybrid molecules between heat-labile enterotoxin and cholera toxin B subunits. Holmgren; Jan, et al. 424/185.1; 424/184.1 424/236.1 424/241.1 424/261.1 530/350. A61K039/00 A61K039/02 A61K039/108 A61K039/106.
- ☐ 5. 6008329. 06 Mar 98; 28 Dec 99. Method for purifying cholera toxin. Dertzbaugh; Mark. 530/417; 530/825. C07K017/14 C07K014/28.
- ☐ 6. 5939397. 25 Mar 98; 17 Aug 99. Treatment of cholera. Heerze; Louis D., et al. 514/25; 514/837. A61K031/70.
- ☐ 7. 5935582. 14 Apr 98; 10 Aug 99. Hog cholera virus vaccine and diagnostic. Meyers; Gregor, et al. 424/220.1; 424/184.1 435/5 435/7.1 536/23.1. A61K039/187 A61K039/00 C12Q001/70 G01N033/53.
- ☐ 8. 5929095. 17 Jun 97; 27 Jul 99. Method of inhibiting secretory effects caused by Cholera. Guerrant; Richard L., et al. 514/342; 514/420 514/468. A61K031/44 A61K031/34 A61K031/405.
- ☐ 9. 5925360. 16 Jun 97; 20 Jul 99. Hog cholera virus vaccine and diagnostic. Meyers; Gregor, et al. 424/220.1; 424/184.1 530/350 530/395 536/23.1. A61K039/187 A61K039/00 C07K001/00 C07K014/00.
- ☐ 10. 5874287. 05 May 95; 23 Feb 99. Mutagenized DNA molecules encoding modified subunit a of Cholera-toxin. Burnette; W. Neal, et al. 435/252.3; 435/252.33 435/254.1 435/325 435/909 536/23.2. C12N001/00 C12N005/10 C12N001/21 C12N015/54.
- ☐ 11. 5874088. 05 Jan 95; 23 Feb 99. Deletion mutants of cholera vaccines expressing heterologous antigens. Mekalanos; John J. 424/200.1; 424/203.1 424/235.1 424/261.1 435/243 435/252.1 435/252.3 435/69.3 435/909. A61K039/106 C12N001/21.
- ☐ 12. 5834246. 21 Jan 97; 10 Nov 98. Recombinant systems for expression of cholera B-subunit with the aid of foreign promoters and/or leader peptides. Holmgren; Jan, et al. 435/69.7; 435/252.3

435/320.1 536/23.4. C12N001/21 C12N015/62.

☐ 13. 5817633. 09 Jul 96; 06 Oct 98. Treatment of cholera. Heerze; Louis D., et al. 514/23; 424/194.1 514/54 514/8 514/837 530/350. A61K031/20.

☐ 14. 5811409. 05 Jun 95; 22 Sep 98. Treatment of cholera. Heerze; Louis D., et al. 514/54; 424/199.1 436/94 514/23 514/53. A61K031/70.

☐ 15. 5811103. 12 Jun 97; 22 Sep 98. Hog cholera virus vaccine and diagnostic. Meyers; Gregor, et al. 424/220.1; 424/184.1 424/192.1. A61K039/187 A61K039/00 A61K039/38.

☐ 16. 5770203. 24 May 95; 23 Jun 98. Modified cholera toxin based on mutagenized subunit A. Burnette; W. Neal, et al. 424/190.1; 424/185.1 424/261.1 424/832 424/94.5 435/193 530/350. A61K039/106 C12N009/10 C07K014/28.

☐ 17. 5661131. 05 Jun 95; 26 Aug 97. Treatment of cholera. Heerze; Louis D., et al. 514/25; 514/837. A61K031/70.

☐ 18. 5639750. 07 Jun 95; 17 Jun 97. Method of inhibiting secretory effects caused by cholera. Guerrant; Richard L., et al. 514/219; 514/453. A61K031/34 A61K031/55.

☐ 19. 5631010. 14 Mar 95; 20 May 97. Genetically stable cholera vaccines with deletions of ctxA, recA and attRS1. Mekalanos; John J.. 424/235.1; 424/200.1 424/261.1 435/243 435/252.1 435/252.3 435/69.3 435/909. A61K039/106 C12N001/21.

☐ 20. 5436239. 01 Apr 93; 25 Jul 95. Method of treating clostridium difficile colitis and cholera. Guerrant; Richard L., et al. 514/219; 514/342 514/420 514/468. A61K031/34 A61K031/405 A61K031/44 A61K031/55.

☐ 21. 5416017. 25 Mar 93; 16 May 95. Cholera toxin gene regulated by tissue-specific promoters. Burton; Frank H., et al. 435/354; 435/252.3 435/320.1 536/23.7 536/24.1. C12N005/10 C12N015/31 C12N015/11 C12N015/85.

☐ 22. 5399567. 13 May 93; 21 Mar 95. Method of treating cholera. Platt; Frances M., et al. 514/315; A61K031/445.

☐ 23. 5330753. 23 Mar 92; 19 Jul 94. Cholera vaccines. Mekalanos; John J., et al. 424/190.1; 424/200.1 424/236.1 424/242.1 424/261.1 514/12 514/16 514/2 530/324 530/350 530/825 536/23.7. C07K015/04 C07K013/00 A61K039/106.

☐ 24. 5268276. 08 Jul 92; 07 Dec 93. Recombinant systems for expression of cholera B-sub-unit with the aid of foreign promoters and/or leader peptides. Holmgren; Jan, et al. 435/69.1; 435/252.3 435/320.1 435/69.7. C12N015/31 C12N015/62.

☐ 25. 5223610. 18 May 90; 29 Jun 93. Cholera toxin gene regulated by growth hormone promoter. Burton; Frank H., et al. 536/24.1; 435/320.1 435/69.2. C12N015/31.

☐ 26. 5214029. 30 Sep 91; 25 May 93. Inhibition of malignant cells having G.sub.M1 ganglio-side sites by administration of cholera toxin. Viallet; Jean, et al. 514/12; 435/177 435/188 514/2 514/8 530/825. A61K039/02 A61K035/74.

- ☐ 27. 5098998. 29 Apr 88; 24 Mar 92. Cholera vaccines and peptides. Mekalanos; John J., et al. 530/350; 424/190.1 424/242.1 424/261.1 514/12 530/825. C07K013/00 C07K015/00 A61K037/02.
-
- ☐ 28. 4968493. 19 Jun 89; 06 Nov 90. Method for controlling chronic respiratory disease, fowl cholera and necrotic enteritis in avian species. Carter; Guy T., et al. 424/122;. A61K035/74.
-
- ☐ 29. 4666837. 24 May 82; 19 May 87. DNA sequences, recombinant DNA molecules and processes for producing the A and B subunits of cholera toxin and preparations containing so-obtained subunit or subunits. Harford; Nigel, et al. 435/69.3; 435/243 435/252.3 435/252.33 435/320.1 435/480 435/69.1 435/849 435/909 435/91.41 436/34 436/6 436/71 536/23.1 536/23.2 536/23.7. C12P021/00 C12P021/02 C12P019/34 C12P021/04 C12N015/00 C12N001/00 C12N001/20 C12R001/19 C12R001/63 C12Q001/68 C12Q001/04 C07H021/04.
-
- ☐ 30. 4328209. 11 Apr 79; 04 May 82. Cholera vaccine. Finkelstein; Richard A., et al. 424/261.1; 424/236.1 424/257.1 435/909. A61K039/106 C12N015/00 C12N001/36 C12R001/63.
-
- ☐ 31. 4308346. 27 Feb 80; 29 Dec 81. Selective isolation medium for cholera vibrio. Niwano; Kiyoshi. 435/34; 435/909. C12Q001/04.
-
- ☐ 32. 4303638. 19 Sep 78; 01 Dec 81. Cholera vaccine. Tayot; Jean-Louis, et al. 424/490; 424/164.1 424/236.1 424/261.1. A61K009/32 A61K009/58.
-
- ☐ 33. 4169886. 21 Aug 78; 02 Oct 79. Fowl cholera vaccine and its preparation. Hertman; Israel, et al. 424/255.1; 424/826. A61K039/02.
-
- ☐ 34. 4136169. 24 Feb 78; 23 Jan 79. Cross-protective fowl cholera bacterins. Rebers; Paul A., et al. 424/255.1; 424/826. A61K039/02.
-
- ☐ 35. 4076815. 23 Feb 77; 28 Feb 78. Quinoxaline compound and composition, process for preparing compound, and method of combatting cholera therewith. Garzia; Aldo, et al. 514/249; 514/837 544/295. A61K031/505 C07D403/06.
-
- ☐ 36. 3629074. 04 Oct 68; 21 Dec 71. EVALUATION OF STERILIZING POWER OF DISINFECTANTS AGAINST HOG CHOLERA VIRUS. Okubo; Teruo. 435/5; 422/28. C12k001/06 C12b003/16.
-
- ☐ 37. 3492201. ; 27 Jan 70. METHOD OF ATTENUATION OF HOG CHOLERA VIRUS. IZAWA HISAO, et al. 435/237; 424/220.1.
-
- ☐ 38. 3489834. ; 13 Jan 70. HOG CHOLERA VACCINE. BAKER JAMES A. 424/220.1; 435/237.
-
- ☐ 39. 3456053. ; 15 Jul 69. INACTIVATED HOG CHOLERA VIRUS VACCINE. CRAWFORD JAMES G. 424/220.1; 435/173.3 435/236 435/238 435/239.
-
- ☐ 40. 3455782. ; 15 Jul 69. NONSTAINING PHENYLENEDIMETHYLENE - BIS-(TRIPHENYLPHOSPHONIUM) SALT - INACTIVATED HOG CHOLERA VIRUS VACCINE. CABASSO VICTOR JACK, et al. 424/220.1; 435/238 987/111.
-
- ☐ 41. 3422188. ; 14 Jan 69. TISSUE CULTURE HOG CHOLERA VACCINE. CABASSO VICTOR JACK. 424/220.1; 435/237.

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L1: Entry 1 of 59

File: USPT

Nov 21, 2000

US-PAT-NO: 6149919

DOCUMENT-IDENTIFIER: US 6149919 A

TITLE: Immunogenic detoxified mutants of cholera toxin and of the toxin LT, their preparation and their use for the preparation of vaccines

DATE-ISSUED: November 21, 2000

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APPL-NO: 08/ 823120 [\[PALM\]](#)

DATE FILED: March 25, 1997

PARENT-CASE:

This application is a continuation of application Ser. No. 08/256,003, filed Nov. 11, 1994, which is a filing under 35 U.S.C. 371 of PCT/EP92/03016, filed Dec. 30, 1992 abandoned; and which is a filing from parent Italian patent application M191 A 003513, filed Dec. 31, 1991.

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	APPL-DATE
IT	M191A03513	December 31, 1991

INT-CL: [07] [A61 K 39/02](#), [A61 K 39/108](#), [A61 K 39/106](#), [C12 P 21/06](#)US-CL-ISSUED: [424/236.1](#); [424/184.1](#), [424/234.1](#), [424/240.1](#), [424/241.1](#), [424/257.1](#), [424/261.1](#), [435/69.3](#), [435/172.3](#)US-CL-CURRENT: [424/236.1](#); [424/184.1](#), [424/234.1](#), [424/240.1](#), [424/241.1](#), [424/257.1](#), [424/261.1](#), [435/69.3](#)FIELD-OF-SEARCH: [424/240.1](#), [424/241.1](#), [424/257.1](#), [424/261.1](#), [424/184.1](#), [424/234.1](#), [424/236.1](#), [435/69.3](#), [435/172.3](#)

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

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PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<input type="checkbox"/> 4666837	May 1987	Harford et al.	435/68
<input type="checkbox"/> 4935364	June 1990	Kaper et al.	435/172.3

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
WO 92/19265	November 1992	WO	
9219265	November 1992	WO	

OTHER PUBLICATIONS

Oseashon R. "Cholera", In Plotkin SA, Mortimer EA eds. Vaccines. Philadelphia, WB Saunders Co. 1988.

Pizza et al. Molecular Microbiology 14(1):51-60, 1994.

Lobet et al. Injection and Immunity 59(9):2870-2879, 1991.

Kaslow et al, Vaccine Research 1(1):47-54, 1992.

Burnette, W.N. et al., "Site-Specific Mutagenesis of the Catalytic Subunit of Cholera Toxin: Substituting Lysine for Arginine 7 Causes Loss of Activity", Inf. & Immun., 1991, 59, 4266-4270.

Dallas, W.S. et al., "Cistrons Encoding Escherichia coli Heat-Labile Toxin", J. Bacteriol., 1979, 139, 850-858.

Grant, C.C.R. et al., "Effect of Single Amino Acid Changes on the ADP-Ribosyltransferase Activity of Escherichia coli Heat-Labile Toxin Subunit A", 92nd Gen. Meet. Am. Soc. Microbiol., 1992, Abstract B289, 74.

Harford, S. et al., "Inactivation of the Escherichia coli heat-labile enterotoxin by in vitro mutagenesis of the A-subunit gene", Eur. J. Biochem., 1989, 183, 311-316.

Holmgren, J. et al., "Oral immunization against cholera", Curr. Top. Microbiol. Immunol., 1988, 146, 197-204.

Kaslow, H.R. et al., "Effects of Site-Directed Mutagenesis on Cholera Toxin A1 Subunit ADP-ribosyltransferase Activity", 92nd Gen. Meet. Am. Soc. Microbiol., 1992, Abstract B291, 74.

Lai, C.Y. et al., "Location and Amino Acid Sequence Around the ADP-Ribosylation Site in the Cholera Toxin Active Subunit A.sub.1", Biochem. Biophys. Res. Comm., 1983, 116, 341-348.

Lebacqz-Verheyden, A.M. et al., "Posttranslation Processing of Endogenous and of Baculovirus-Expressed Human Gastrin-Releasing Peptide Precursor", Mol. Cell. Biol., 1988, 8, 3129-3135.

Lobet, Y. et al., "Effect of Site-Directed Mutagenic Alterations on ADP-Ribosyltransferase Activity of the A Subunit of Escherichia coli Heat-Labile Enterotoxin", Inf. & Immun., 1991, 59, 2870-2879.

Lycke, N. et al., "The adjuvant effect of Vibrio cholerae and Escherichia coli heat-labile enterotoxins is linked to their ADP-ribosyltransferase activity", Eur. J. Immunol., 1992, 22, 2277-2281.

Mekalanos, J.J. et al., "Cholera toxin genes" nucleotide sequence, deletion analysis and vaccine development, Nature, 1983, 306, 551-557.

Pearson, G.D.N. et al., "Molecular cloning of Vibrio cholerae enterotoxin genes in Escherichia coli K-12", Proc. Natl. Acad. Sci. USA, 1982, 79, 2976-2980.

Pickett, C.L. et al., "Genetics of Type Iia Heat-Labile Enterotoxin of Escherichia coli: Operon Fusions, Nucleotide Sequence, and Hybridization Studies", J. Bacteriol., 1987, 169, 5180-5187.

Sixma, T.K. et al., "Crystal structure of a cholera toxin-related heat-labile enterotoxin from E. coli", Nature, 1991, 351, 371-377.

Spicer, E.K. et al., "Escherichia coli Heat-Labile Enterotoxin", Biol. Chem., 1982, 257, 5716-5721.

Tsuji, T. et al., "A Single Amino Acid Substitution in the A Subunit of Escherichia coli Enterotoxin Results in a Loss of Its Toxic Activity", J. Biol. Chem., 1990, 265, 22520-22525.

Yamamoto, T. et al., "Primary Structure of Heat-labile Enterotoxin Produced by Escherichia coli Pathogenic for Humans", J. Biol. Chem., 1984, 259, 5037-5044.

ART-UNIT: 161

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ABSTRACT:

An immunogenic detoxified protein comprising the amino acid sequence of subunit A of cholera toxin (CT-A) or subunit A of an Escherichia coli heat labile toxin (LT-A) or a fragment thereof wherein one or more amino acids at, or in positions corresponding to Val-53, Ser-63, Val-97, Tyr-104 or Pro-106 are replaced with another amino acid or deleted. Examples of specific replacements include Val-53-Asp, Asp, Val-53-Glu, Val-53-Tyr, Ser-63-Lys, Val-97-Lys, Val-97-Tyr, Tyr-104-Lys, Tyr-104-Asp, Tyr-104-Ser, Pro-106-Ser. The immunogenic detoxified protein is useful as vaccine for Vibrio cholerae or an enterotoxigenic strain of Escherichia coli and is produced by recombinant DNA means by site-directed mutagenesis.

9 Claims, 4 Drawing figures

- ☐ 42. 3346456. ; 10 Oct 67. Immunizing pigs against hog cholera with selected strains of live virus diarrhea virus and preparation of virus diarrhea virus hyper-immune hog cholera serum. BAKER JAMES A. 424/162.1; 424/159.1 424/220.1.
- ☐ 43. 3328253. ; 27 Jun 67. Process for the production and purification of ogawa lipopolysaccharide cholera antigen. YOSHIKAZU WATANABE. 424/261.1; 435/101 435/909.
- ☐ 44. 3297534. ; 10 Jan 67. Method for hyperimmunizing hogs against hog cholera and serum product. SCOTT ROBERT M. 424/162.1; 424/220.1 424/553 424/579.
- ☐ 45. 3226296. ; 28 Dec 65. Attenuated hog cholera virus vaccine and method of producing same. BOYNTON ETHEL C. 424/220.1; 435/237.
- ☐ 46. 3122477. ; 25 Feb 64. Hog cholera vaccine and method of making the same. BECKENHAUER BECKENHAUER WILLIAM H, et al. 424/218.1; 435/235.1.
- ☐ 47. 3014843. ; 26 Dec 61. Method of producing non-virulent strains of attenuated and stabilized hog cholera virus. BAKER JAMES A. 424/9.1; 424/220.1 436/543 436/547 436/826.
- ☐ 48. 2926120. ; 23 Feb 60. Preparation of an anti-hog cholera product. DAVENPORT JR MARK E, et al. 424/162.1; 530/389.4 530/829.
- ☐ 49. 2785105. ; 12 Mar 57. Method of preparing hog cholera antibody concentrate. SEIDEL ROLAND J, et al. 424/162.1; 514/21 530/389.4 530/830.
- ☐ 50. 2720485. ; 11 Oct 55. Preparation of concentrated, purified ultraviolet inactivated hog cholera vaccine. BRUECKNER ALFRED H, et al. 435/173.3; 424/220.1 435/236 435/239.

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